

## Abstract of the Disclosure

### SYNTHESIS OF FUNCTIONALIZED HIGH VINYL RUBBER

5        This invention is based upon the discovery that  
rubbery polymers having a high vinyl content and a low  
degree of branching can be synthesized with an  
initiator system that is comprised of (a) a lithium  
initiator selected from the group consisting of  
10 allylic lithium compounds and benzylic lithium  
compounds, (b) a Group I metal alkoxide, and (c) a  
polar modifier; wherein the molar ratio of the Group I  
metal alkoxide to the polar modifier is within the  
range of about 0.1:1 to about 10:1; and wherein the  
15 molar ratio of the Group I metal alkoxide to the  
lithium initiator is within the range of about 0.01:1  
to about 20:1. These high vinyl polymers offer  
reduced levels of hysteresis and better  
functionalization efficiency. By virtue of their  
20 lower level of hysteresis these polymers can be  
utilized in manufacturing tire tread compounds that  
exhibit lower levels of rolling resistance and can  
accordingly be used to improve the fuel economy of  
motor vehicles without compromising other desirable  
25 characteristics, such as traction and tread-wear.